1. A method of manipulating an optical signal, comprising the steps of:

a) splitting the optical signal into a first signal and a second signal,

b) using the second signal as a signal undelayed with respect to the optical signal,

c) delaying the first signal with respect to the second signal,

d) splitting the first signal into a first and a second part,

e) using the second part of the first signal as a delayed signal, and

f) repeating steps a)- d) with the first part of the first signal.

2. The method of claim 1, further comprising delaying the first signal by letting the first signal travel a different path than the second signal.

3. The method of claim 1, wherein the ratio of the first and the second part has a range of between 5:95 and 50:50.

4. The method of claim 1, further comprising performing all splitting operations at the same splitting point.

5. A method of determination of properties of an optical device under test, comprising the steps of:

splitting an initial light beam into a measurement beam and a reference beam of an interferometer,

coupling the measurement beam into the optical device under test,

letting the reference beam travel a different path as the measurement beam by manipulating the reference beam according to the method of claim 1,

superimposing the reference beam and the measurement beam to produce interference in a resulting superimposed light beam,

detecting the power of the resulting superimposed light beam as a

function of frequency when tuning the frequency of the initial light beam from a minimum to a maximum of a given frequency range, and

deriving optical properties of the device under test from the frequency dependency of the detected powers.

6. A software program or product stored on a data carrier for executing the method of claim 1, when run on a data processing system such as a computer.

7. An apparatus for manipulating an optical signal, comprising:

a first splitting device for splitting the optical signal into a first signal and a second signal,

a delaying device for delaying the first signal with respect to the second signal so that the second signal can be used as a signal undelayed with respect to the optical signal,

a second splitting device for splitting the first signal into a first and a second part, so that the second part of the first signal can be used as a delayed signal, and

a repeating device for providing the first part of the first signal to the first splitting device.

8. The apparatus of claim 7, wherein the first and the second splitting devices are identical.

9. The apparatus of claim 7, wherein the splitting devices comprise a beam splitter or coupler .

10. The apparatus of claim 7, wherein the delaying device is a loop connected with the splitting devices.

11. The apparatus of claim 7, wherein the delaying device and the repeating device are identical.

12. An apparatus for determination of properties of an optical device under test, comprising:

a first beam splitter for splitting an initial light beam into a measurement beam and a reference beam of an interferometer,

a connecting device for coupling the measurement beam into the optical device under test,

an apparatus for manipulating an optical signal according to claim 7 for letting the reference beam travel a different path as the measurement beam,

a second beam splitter for superimposing the reference beam and the measurement beam to produce interference in a resulting superimposed light beam,

a detector for detecting the power of the resulting superimposed light beam as a function of frequency when tuning the frequency of the initial light beam from a minimum to a maximum of a given frequency range, and

a processing unit for deriving optical properties of the device under test from the frequency dependency of the detected powers.